

# PATRICK KAMIENESKI

## Exploration Postdoctoral Fellow

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## EDUCATION

- 02/2023 **Ph.D. Astronomy**  
**University of Massachusetts**, Amherst, MA, USA  
Thesis: *Dissecting the Most Extreme Starburst Events in the Universe With Gravitational Lensing*  
Advisor: Prof. Min S. Yun.
- 05/2015 **B.A. Physics, Mathematics, cum laude,**  
**Bowdoin College**, Brunswick, ME, USA  
Minor: French.

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## EMPLOYMENT

- 10/2022–present **School of Earth and Space Exploration Postdoctoral Fellow**, Arizona State University, Tempe, AZ, USA.
- 2015–2022 **Graduate Research Assistant and Teaching Assistant**, University of Massachusetts Amherst.
- 2014 **Undergraduate Research Assistant (NSF-REU)**, MIT Haystack Observatory, Westford, MA, USA.
- 2012-2015 **Undergraduate Teaching Assistant**, Department of Mathematics, Bowdoin College.

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## AWARDS, GRANTS & FELLOWSHIPS

- 2024 **ALMA Ambassadors Program Grant, Cycle 11, \$10000.**
- 2023 **Robert L. Brown Outstanding Doctoral Dissertation Award.**  
Award given each year to a recent recipient of a doctoral degree that is substantially based on observational data obtained at an NRAO/AUI-operated facility
- 2022 **AAS Rodger Doxsey Travel Prize, \$780.**  
Travel prize to present dissertation talk at AAS Meeting 239 (canceled due to COVID-19, deferred to AAS 240)
- 2020-2022 **NRAO Student Observing Support, \$27,790.**  
In support of ALMA program 2019.1.01197.S (PI: P. Kamieneski)
- 2022 **Mary Dailey Irvine Graduate Travel Award, 5 awards, total \$4130.**  
**2022:** AAS Meeting 239 (canceled due to COVID-19, deferred to AAS 240), \$1000  
**2018:** EWASS Meeting 2018, \$800  
**2017:** CHANG-ES Meeting 2017, \$600  
**2017:** AAS Meeting 229, \$630  
**2016:** 15th Synthesis Imaging Workshop, \$1100
- 2019 **AAS/NSF International Travel Grant, 3 awards, \$2659 total.**  
**2019:** "Views on the Interstellar Medium in Galaxies in the ALMA Era" Conference 2019, \$608  
**2018:** "The Universe as a Telescope" Conference 2018, \$1426  
**2018:** EWASS Meeting 2018, \$625
- 2016-2017 **Massachusetts Space Grant Consortium Summer Fellowship, \$11,000 total.**

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## PUBLICATIONS

Summary: **33 publications (refereed or under review): 3 first-author, 701 citations, h-index: 15.**  
[Complete publication list from ADS](#)

- 2024 **A Novel high- $z$  Galaxy Efficient Line Survey in ALMA bands 3 through 8 – An ANGELS Pilot**, *submitted to journal* [ADS pending].  
Tom J. L. C. Bakx, A. Amvrosiadis, G. J. Bendo, H. S. B. Algera, S. Serjeant, L. Bonavera, E. Borsato, X. Chen, P. Cox, J. González-Nuevo, M. Hagimoto, K. C. Harrington, R. J. Ivison, P. S. Kamieneski, L. Marchetti, et al.
- 2024 **SN H0pe: The First Measurement of  $H_0$  from a Multiply-Imaged Type Ia Supernova, Discovered by JWST**, *submitted to journal* [ADS].  
Massimo Pascale, B. L. Frye, J. D. R. Pierel, W. Chen, P. L. Kelly, S. H. Cohen, R. A. Windhorst, A. G. Riess, P. S. Kamieneski, J. M. Diego, A. K. Meena, S. Cha, M. Oguri, A. Zitrin, M. J. Jee, et al.
- 2024 **Sub-halos v. Halos: Which Better Reproduces the Statistics of Lensed Submillimeter Galaxies?**, *submitted to journal* [ADS pending].  
Anthony Englert, P. Kamieneski, M. Yun
- 2024 **JWST's PEARLS: resolved study of the stellar and dust components in starburst galaxies at cosmic noon**, *accepted & in press, A&A* [ADS].  
Mari Polletta, B. L. Frye, N. Garuda, et al.
- 29.) 10/2024 **PEARLS: Discovery of Point-Source Features Within Galaxies in the North Ecliptic Pole Time Domain Field**, *ApJ*, 974, 258 [ADS].  
Rafael Ortiz III, R. A. Windhorst, S. H. Cohen, S. P. Willner, R. A. Jansen, T. Carleton, P. S. Kamieneski, M. J. Rutkowski, B. M. Smith, J. Summers, C. Cheng, D. Coe, C. J. Conselice, J. M. Diego, S. P. Driver, et al.
- 28.) 09/2024 **Birds of a Feather: Resolving Stellar Mass Assembly With JWST/NIRCam in a Pair of Kindred  $z \sim 2$  Dusty Star-forming Galaxies Lensed by the PLCK G165.7+67.0 Cluster**, *ApJ*, 973, 25 [ADS].  
P. Kamieneski, B. L. Frye, R. A. Windhorst, K. C. Harrington, M. S. Yun, A. Noble, M. Pascale, N. Foo, S. H. Cohen, R. A. Jansen, T. Carleton, A. M. Koekemoer, C. N. A. Willmer, J. S. Summers, N. Garuda, et al.
- 27.) 09/2024 **Detailed study of a rare hyperluminous rotating disk in an Einstein ring 10 billion years ago**, *Nature Astronomy* 8, 1181 [ADS].  
Daizhong Liu, N. M. Förster Schreiber, K. C. Harrington, L. L. Lee, P. Kamieneski, R. I. Davies, D. Lutz, A. Renzini, S. Wuyts, L. J. Tacconi, R. Genzel, A. Burkert, R. Herrera-Camus, B. Alcalde Pampliega, A. Vishwas, et al.
- 26.) 07/2024 **First Constraints on the ISM Conditions of a Low Mass, Highly Obscured  $z = 4.27$  Main Sequence Galaxy**, *ApJ*, 970, 30 [ADS].  
Andrew Mizener, A. Pope, J. McKinney, P. S. Kamieneski, K. E. Whitaker, A. Battisti, E. Murphy
- 25.) 05/2024 **Lensed Type Ia Supernova "Encore" at  $z = 2$ : The First Instance of Two Multiply-Imaged Supernovae in the Same Host Galaxy**, *ApJL*, 967, L37 [ADS].  
Justin D. R. Pierel, A. B. Newman, S. Dhawan, et al.
- 24.) 05/2024 **JWST Photometric Time-Delay and Magnification Measurements for the Triply-Imaged Type Ia "Supernova H0pe" at  $z = 1.78$** , *ApJ*, 967, 50 [ADS].  
Justin D. R. Pierel, B. L. Frye, M. Pascale, et al.
- 23.) 02/2024 **PEARLS: A Potentially Isolated Quiescent Dwarf Galaxy with a TRGB Distance of 31 Mpc**, *ApJL*, 961, L37 [ADS].  
Timothy Carleton, T. Ellsworth-Bowers, R. Windhorst, S. Cohen, C. Conselice, J. Diego, A. Zitrin, H. Archer, I. McIntyre, P. Kamieneski, S. Willner, R. Jansen, J. Summers, J. D'Silva, A. Koekemoer, et al.
- 22.) 02/2024 **The JWST Discovery of the Triply Imaged Type Ia "Supernova H0pe" and Observations of the Galaxy Cluster PLCK G165.7+67.0**, *ApJ*, 961, 171 [ADS].  
Brenda Frye, M. Pascale, J. Pierel, W. Chen, N. Foo, R. Leimbach, N. Garuda, S. Cohen, P. Kamieneski, R. Windhorst, A. Koekemoer, P. Kelly, J. Summers, M. Engesser, D. Liu; et al.
- 21.) 02/2024 **X-ray detection of the most extreme star-forming galaxies at the cosmic noon via strong lensing**, *MNRAS*, 527, 10584 [ADS].  
Q. Daniel Wang, C. Garcia Diaz, P. S. Kamieneski, K. C. Harrington, M. S. Yun, N. Foo, B. L. Frye, E. F. Jimenez-Andrade, D. Liu, J. D. Lowenthal, B. A. Pampliega, M. Pascale, A. Vishwas
- 20.) 01/2024 **PASSAGES: the wide-ranging, extreme intrinsic properties of *Planck*-selected, lensed dusty star-forming galaxies**, *ApJ*, 961, 2 [ADS].  
P. Kamieneski, M. Yun, K. Harrington, J. Lowenthal, Q. D. Wang, B. Frye, E. Jiménez-Andrade, A. Vishwas, O. Cooper, M. Pascale, N. Foo, D. Berman, A. Englert, C. Garcia Diaz
- 19.) 12/2023 **Magellanic System Stars Identified in the SMACS J0723.3-7327 JWST ERO Images**, *ApJ*, 958, 108 [ADS].  
Jake Summers, R. Windhorst, S. Cohen, R. Jansen, T. Carleton, P. Kamieneski, B. Holwerda, C. Conselice, N. Adams, B. Frye, J. Diego, C. Willmer, R. Ortiz, C. Cheng, A. Pigarelli, et al.

- 18.) 11/2023 **Hidden giants in JWST's PEARLS: An ultra-massive  $z = 4.26$  sub-millimeter galaxy that is invisible to HST**, *ApJ*, 958, 36 [ADS].  
Smail, Ian; Dudzeviciute, Ugne; Gurwell, Mark; et al.
- 17.) 09/2023 **Are JWST/NIRCam color gradients in a lensed  $z = 2.3$  dusty star-forming galaxy due to central dust attenuation or inside-out galaxy growth?**, *ApJ*, 955, 91 [ADS].  
P. Kamieneski, B. Frye, M. Pascale, S. Cohen, R. Windhorst, R. Jansen, C. Cheng, H. Yan, J. Summers, T. Carleton, M. Yun, K. Harrington, N. Foo, J. Diego, C. Conselice; et al.
- 16.) 08/2023 **PEARLS: Low Stellar Density Galaxies in the El Gordo Cluster Observed with JWST**, *ApJ*, 953, 83 [ADS].  
Timothy Carleton, S. Cohen, B. Frye, A. Pigarelli, J. Zhang, R. Windhorst, J. Diego, C. Conselice, C. Cheng, S. Driver, N. Foo, R. Bhatawdekar, P. Kamieneski, R. Jansen, H. Yan, et al.
- 15.) 07/2023 **Paper 1: The JWST PEARLS View of the El Gordo Galaxy Cluster and of the Structure It Magnifies**, *ApJ*, 952, 81 [ADS].  
Brenda Frye, M. Pascale, N. Foo, R. Leimbach, N. Garuda, P. Soto Robles, J. Summers, C. Diaz, P. Kamieneski, L. Furtak, S. Cohen, J. Diego, B. Beauchesne, R. Windhorst, S. Willner, et al.
- 14.) 07/2023 **ALMA Reveals a Stable Rotating Gas Disk in a Paradoxical Low-mass, Ultradusty Galaxy at  $z = 4.274$** , *ApJL*, 951, L46 [ADS].  
Alexandra Pope, J. McKinney, P. Kamieneski, A. Battisti, I. Aretxaga, G. Brammer, J. M. Diego, E. Keller, D. Marchesini, A. Mizener, A. Montana, E. Murphy, K. Whitaker, G. Wilson, M. Yun
- 13.) 07/2023 **Spectroscopy of the Supernova H0pe Host Galaxy at Redshift 1.78**, *A&A Letters*, 675, L4 [ADS].  
Mari Polletta; M. Nonino, B. Frye, A. Gargiulo, S. Bisogni, N. Garuda, D. Thompson, M. Lehnert, M. Pascale, S. Willner, P. Kamieneski, R. Leimbach, C. Cheng, D. Coe, S. Cohen, et al.
- 12.) 04/2023 **JWST's PEARLS: A new lens model for ACT-CL J0102-4915, "El Gordo," and the first red supergiant star at cosmological distances discovered by JWST**, *A&A*, 672, A3 [ADS].  
Diego, Jose M.; Meena, A. K.; Adams, N. J.; et al.
- 11.) 01/2023 **JWST's PEARLS: A JWST/NIRCam view of ALMA sources**, *ApJL*, 942, L19 [ADS].  
Cheng, Cheng; Huang, Jia-Sheng; Smail, Ian; et al.
- 10.) 01/2023 **JWST PEARLS: Prime Extragalactic Areas for Reionization and Lensing Science: Project Overview and First Results**, *AJ*, 165, 13 [ADS].  
Windhorst, Rogier A.; Cohen, S. H.; Jansen, R. A.; et al.
- 9.) 10/2022 **Unscrambling the lensed galaxies in JWST images behind SMACS0723**, *ApJL*, 938, L6 [ADS].  
Pascale, Massimo; Frye, B. L.; Diego, J.; Furtak, L. J.; Zitrin, A.; Broadhurst, T.; Conselice, C.; Dai, L.; Ferreira, L.; Adams, N. J.; Kamieneski, P.; Foo, N.; Kelly, P.; Chen, W.; Lim, J.; Meena, A. K.; Wilkins, S. M.; Bhatawdekar, R.; Windhorst, R. A.
- 8.) 09/2022 **PASSAGES: The Large Millimeter Telescope and ALMA Observations of Extremely Luminous High Redshift Galaxies Identified by the *Planck***, *MNRAS*, 515, 3911 [ADS].  
Berman, Derek A.; Yun, Min S.; Harrington, K. C.; Kamieneski, P.; Lowenthal, J.; Frye, B. L.; Wang, Q. D.; Wilson, G. W.; Aretxaga, I.; Chavez, M.; Cybulski, R.; De la Luz, V.; Erickson, N.; Ferrusca, D.; Hughes, D. H.; et al.
- 7.) 06/2022 **Possible Ongoing Merger Discovered by Photometry and Spectroscopy in the Field of the Galaxy Cluster PLCK G165.7+67.0**, *ApJ*, 932, 85 [ADS].  
Pascale, Massimo Frye, B.; Dai, L.; et al.
- 6.) 02/2021 **Turbulent Gas in Lensed *Planck*-selected Starbursts at  $z \sim 1 - 3.5$** , *ApJ*, 908, 95 [ADS].  
Harrington, Kevin C.; Weiss, A.; Yun, M. S.; et al.
- 5.) 10/2019 **CHANG-ES XV: Large-scale magnetic field reversals in the radio halo of NGC 4631**, *A&A*, 632, A11 [ADS].  
Mora-Partiarroyo, Silvia Carolina; Krause, M.; Basu, A.; Beck, R.; Wiegert, T.; Irwin, J.; Henriksen, R.; Stein, Y.; Vargas, C.; Heesen, V.; Walterbos, R.; Rand, R.; Heald, G.; Li, J.; Kamieneski, P.; English, J.
- 4.) 10/2019 **CHANG-ES XIV: Cosmic-ray propagation and magnetic field strengths in the radio halo of NGC 4631**, *A&A*, 632, A10 [ADS].  
Mora-Partiarroyo, Silvia Carolina; Krause, M.; Basu, A.; Beck, R.; Wiegert, T.; Irwin, J.; Henriksen, R.; Stein, Y.; Vargas, C.; Heesen, V.; Walterbos, R.; Rand, R.; Heald, G.; Li, J.; Kamieneski, P.; English, J.

- 3.) 09/2019 **The ‘Red Radio Ring’: ionized and molecular gas in a starburst/active galactic nucleus at  $z \sim 2.55$** , MNRAS, 488, 1489 [ADS].  
Harrington, K. C.; Vishwas, A.; Weiß, A.; Magnelli, B.; Grassitelli, L.; Zajaček, M.; Jiménez-Andrade, E. F.; Leung, T. K. D.; Bertoldi, F.; Romano-Díaz, E.; Frayer, D. T.; **Kamieneski, P.**; Riechers, D.; Stacey, G. J.; Yun, M. S.; Wang, Q. D.
- 2.) 08/2018 **The gravitationally unstable gas disk of a starburst galaxy 12 billion years ago**, Nature, 560, 613 [ADS].  
Tadaki, K.; Iono, D.; Yun, M. S.; et al.
- 1.) 01/2017 **CHANG-ES VIII. Uncovering hidden AGN activity in radio polarization**, MNRAS, 464, 1333 [ADS].  
Irwin, J. A.; Schmidt, P.; Damas-Segovia, A.; Beck, R.; English, J.; Heald, G.; Henriksen, R. N.; Krause, M.; Li, J.-T.; Rand, R. J.; Wang, Q. D.; Wiegert, T.; **Kamieneski, P.**; Paré, D.; Sullivan, K.

## CONFERENCE PROCEEDINGS AND NON-REFEREED PUBLICATIONS

- 07/2024 **New Spectroscopic Redshift Places PEARLSDG in a Group at  $\sim 124$  Mpc**, RNAAS, 8, 181 [ADS].  
Timothy Carleton, S. P. Willner, T. Ellsworth-Bowers, R. A. Windhorst, S. H. Cohen, C. J. Conelice, J. M. Diego, A. Zitrin, H. N. Archer, I. McIntyre, **P. Kamieneski**, R. A. Jansen, J. Summers, J. C. J. D’Silva, A. M. Koekemoer, et al.
- 03/2024 **Where are the Eddington-limited starbursts? Gravitational lensing provides a way forward for sub-kiloparsec views of star formation**, *Proceedings of the IAU*, 18(S381), 147 [ADS].  
**P. Kamieneski**

## OBSERVATIONAL PROGRAMS (AS PI)

- 2022 **Atacama Large Millimeter/submillimeter Array (ALMA)**, 2022.1.01311.S, Cycle 9 (**PI: P. Kamieneski**).  
*Star Formation Beyond the Eddington Limit? 100pc-scale Dust Continuum Imaging in Strongly-lensed Dusty Starbursts*  
Time awarded: 15.5 hrs
- 2021 **Atacama Large Millimeter/submillimeter Array (ALMA)**, 2021.1.00499.S, Cycle 8 (**PI: P. Kamieneski**).  
*Probing Gas, Dust, Stars, and Star Formation Activity down to 100-pc Scales using Strong Gravitational Lensing*  
Time awarded: 18.3 hrs
- 2019 **Atacama Large Millimeter/submillimeter Array (ALMA)**, 2019.1.01197.S, Cycle 7 (**PI: P. Kamieneski**).  
*Probing Gas, Dust, Stars, and Star Formation Activity down to 100-pc Scales using Strong Gravitational Lensing*  
Time awarded: 7.4 hrs
- 2018 **Large Millimeter Telescope (LMT)**, 2018-S1-MU-7 (**PI: P. Kamieneski**).  
*AzTEC Photometric Imaging of Planck-selected Dusty Star-Forming Galaxies*  
Time awarded: 1.5 hrs, *not observed*
- 2018 **Karl G. Jansky Very Large Array (JVLA)**, 18A-399 (**PI: P. Kamieneski**).  
*VLA Study of Hyperluminous SMGs Identified from Planck All-Sky Survey*  
Time awarded: 39 hrs

## SELECTED CO-I OBSERVATIONAL PROGRAMS

### ALMA 9 programs.

- (Atacama Large Millimeter/submillimeter Array)
- 2024.1.01396.S (PI: K. Harrington), 2024, *Resolving gassy variations in the low-to-high J CO lines in lensed starbursts at cosmic noon*
  - 2023.1.00299.S (PI: N. Foo), 2023, *Resolved Multi-J CO/[CI] study of a strongly lensed, Planck-selected  $z = 2.66$  dusty protocluster of at least 9 DSFGs*
  - 2023.1.00251.S (PI: B. Alcalde Pampliega), 2023, *Unveiling a hidden gem: an extraordinarily bright strongly lensed galaxy behind Milky Way dust clouds*
  - 2022.1.01282.S (PI: K. Harrington), 2022, *ACA mosaic search for dusty sources in and around the critical curves of Planck-selected strong lensing clusters (138 hrs)*
  - 2021.1.00447.S (PI: M. Yun), 2021, *The Origin of [C II] and [N II] Emission in High-z Dusty Starbursts (Cycle8)*
  - 2021.2.00888.S (PI: K. Harrington), 2021, *ACA B7 and B8 Mosaic of a Planck-selected cluster-lensed dusty protocluster at  $z = 2.7$*
  - 2021.1.00353.S (PI: K. Harrington), 2021, *Probing gas excitation variations in lensed starbursts at cosmic noon via sub-kpc imaging of [CI] and the CO ladder*
  - 2019.1.01636.S (PI: M. Yun), 2019, *The Origin of [C II] and [N II] Emission in High-z Dusty Starbursts*
  - 2017.1.01214.S (PI: M. Yun), 2017, *ALMA Study of the Hyperluminous SMGs Identified from Planck All-Sky Survey*

- JWST** (*James Webb Space Telescope*) **3 programs.**  
**GO-6353** (PI: M. Pascale), 2024, *Confirming Secondary Star Formation Conditions in Nitrogen-Enriched Super Star Clusters at Cosmic Noon*  
**GO-4744** (PI: B. Frye), 2024, *SN H0pe: Doubling the Time Delay Precision of a  $z = 1.78$  Multiply-imaged Type Ia Supernova*  
**DD-4446** (PI: B. Frye), 2023, *SN H0pe: Independent Measurement of  $H_0$  by the Time Delay of a Multiply-imaged Supernova*
- LMT** (Large Millimeter Telescope) **7 programs.**  
**2024-S1-00335** (PI: B. Alcalde Pampliega), 2024, *Unveiling a hidden gem: an extraordinarily bright strongly lensed galaxy behind Milky Way dust clouds*  
**2024-S1-00385** (PI: C. Garcia Diaz), 2024, *High Resolution SZE Map of a Possibly Disturbed Galaxy Cluster*  
**2024-S1-00321** (PI: N. Foo), 2024, *Exploration of a Lensed  $z = 2.66$  Protocluster Discovered by Planck + LMT + ALMA*  
**2023-S1-US-25** (PI: N. Foo), 2023, *Exploration of a Lensed  $z = 2.66$  Protocluster Discovered by Planck + LMT + ALMA*  
**2023-S1-MX-19** (PI: E. Jimenez-Andrade), 2023, *ToI/TEC observations of the JWST/GTO Cluster PLCK G165.7+67.0*  
**2023-S1-UM-10** (PI: M. Yun), 2023, *LMT Study of Planck-selected Luminous Star Forming Galaxies*  
**2018-S1-MU-78** (PI: M. Yun), 2018, *LMT Study of Extremely Luminous Galaxies Identified using Planck and WISE*
- Gemini** **5 programs.**  
**GN-2022B-FT-107** (PI: C. Garcia Diaz), 2022, *Spectroscopic determination of the relationship between a luminous X-ray AGN and a strongly lensed HyLIRG at  $z = 3.55$*   
**GN-2022A-FT-209** (PI: O. Cooper), 2022, *Spectroscopic determination of the relationship between a luminous X-ray AGN and a strongly lensed HyLIRG at  $z = 3.55$*   
**GS-2021B-FT-102** (PI: O. Cooper), 2021, *Comprehensive Lens Characterization for a Hyperluminous DSFG at  $z = 2$*   
**GS-2018B-Q-123** (PI: J. Lowenthal), 2018, *Gravitational Lens Models for the Brightest Planck SMGs at  $1 < z < 4$*   
**GS-2018A-Q-216** (PI: J. Lowenthal), 2018, *Gravitational Lens Models for the Brightest Planck SMGs at  $1 < z < 4$*
- XMM-Newton** **3 programs.**  
**AO-22-092283** (PI: C. Garcia Diaz), 2022, *Understanding the role of AGN in HyLIRGs: study of a strongly lensed sample*  
**AO-21-090266** (PI: B. Frye), 2021, *Observations of the JWST/GTO Binary Cluster PLCK G165.7+67.0*  
**AO-20-088272** (PI: Q. D. Wang), 2021, *X-raying hyperluminous sub-millimeter galaxies via strong gravitational lenses (544 ksec Large Program)*
- ESO VLT** **3 programs.**  
(Very Large Telescope) **114.27Q3** Enhanced Resolution Imaging Spectrograph (ERIS) (PI: B. Alcalde Pampliega), 2024, *Peering into the Most Massive Strongly Lensed SFGs: a deep ERIS view of PJ0116-24*  
**113.26L1** Enhanced Resolution Imaging Spectrograph (ERIS) (PI: K. Harrington), 2023, *A dusty ERIS survey of six of the most gas-rich, massive, magnified starbursts*  
**SV 110.258S** ERIS (PI: D. Liu), 2022, *Dissecting the Most Massive Strongly Lensed SFGs (Pilot)*
- HST** (*Hubble Space Telescope*) **1 program.**  
**GO-17439** (PI: A. Noble), 2023, *Skeletons in the Cluster: Unveiling the Stellar Mass Backbone of  $z = 1.6$  Galaxies*
- JVLA** (Jansky Very Large Array) **2 programs.**  
**24B-259** (PI: T. Bakx), 2024, *A pilot for an alternative magnetic field tracer towards the early Universe*  
**18B-275** (PI: K. Harrington), 2018, *Resolved Imaging of Cold Gas Reservoirs in Strongly Lensed Planck Galaxies*
- SMA** (Submillimeter Array) **2 programs.**  
**2020A-S014** (PI: K. Harrington), 2020, *Rest-frame 775 - 1730 GHz ISM Diagnostics of the Most IR Luminous, Lensed Planck Starburst at  $z = 3$*   
**2016B-S062** (PI: M. Yun), 2016, *Probing Dense Gas Powering SF/AGN Activities in High- $z$  SMGs using Lensing*
- IRAM 30m** (Institut de radioastronomie millimétrique) **2 programs.**  
**201-18** (PI: K. Harrington), 2018, *Dense Gas in Strongly Lensed High- $z$  Starbursts Selected by Planck: A continuation (62 hrs)*  
**170-17** (PI: M. Yun), 2018, *Probing Physical Diagnostics of SF via CO SLEDs Out to the Highest-J Transitions in Strongly Lensed  $z > 1$  HyLIRGs (86 hrs)*

- APEX 1 program.**  
(Atacama Pathfinder Experiment)  
**0101.F-9503(A)** (PI: K. Harrington), 2018, *Probing the Dense Star-forming ISM of Lensed  $z \sim 2 - 3$  HyLIRGS via Low- $J$   $H_2O$  and High- $J$  CO Emission Lines*
- GBT (Green Bank Telescope) 1 program.**  
**17B-305** (PI: K. Harrington), 2017, *CO(1-0) Probe of SF Supply for the Brightest Planck-LMT, High- $z$  Galaxies*

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## COLLOQUIA & INVITED TALKS

- 02/2024 **NOIRLab FLASH Talk**, Tucson, AZ.  
Contributed Talk: *Resolving the Universe's most extreme star formation events with JWST, ALMA, and gravitational lensing*
- 09/2023 **Arizona State University, School of Earth and Space Exploration**, Tempe, AZ.  
Invited Colloquium: *Monster Galaxies in the Early Universe, and How Gravitational Lensing Reveals Their Secrets*
- 03/2023 **National Radio Astronomy Observatory / University of Virginia**, Charlottesville, VA.  
Invited Colloquium: *Robert Brown Thesis Award: Dissecting Extreme Starburst Events at Cosmic Noon with Gravitational Lensing*
- 06/2022 **Parsec Institute, Université de Montréal**, Montreal, QC, Canada (virtual).  
Invited Talk: *Dissecting the Most Extreme Starburst Events in the Universe with Gravitational Lensing*
- 05/2022 **Cornell University Galaxy Lunch**, Ithaca, NY (virtual).  
Invited Talk: *Dissecting the Most Extreme Starburst Events in the Universe with Gravitational Lensing*

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## CONFERENCES, MEETINGS & CONTRIBUTED TALKS

- 09/2024 **Views on the multi-phase interstellar medium in galaxies (ALMABO 2024)**, Bologna, Italy.  
Contributed Talk: *Blowing dusty bubbles into the CGM: the contribution of dust-enshrouded starbursts to the baryon cycle*
- 09/2024 **AGN Feedback and Star Formation Across Cosmic Scales and Time**, Sirolo, Italy.  
Contributed Talk: *The role of dust-enshrouded star formation in quenching galaxies*
- 04/2024 **Extreme Galaxies in their extreme environments at extremely early epochs**, Reykjavik, Iceland.  
Poster: *Why don't monstrously star-forming dusty galaxies blow themselves apart?*
- 03/2024 **The Physics and Impact of Astrophysical Dust: from Star Formation through Cosmology**, Aspen, CO.  
Contributed Talk: *Deciphering the role of stellar feedback in dusty starbursts through gravitational lensing*
- 07/2023 **The James Webb Space Telescope Turns One: The Birth and Growth of Galaxies**, Sesto, Italy.  
Contributed Talk: *Inside-out galaxy growth or dust attenuation gradients? Examining the UV/optical/IR distribution of a lensed  $z = 2.3$  dusty starburst at sub-kpc resolution*
- 06/2023 **IAUS 381: Strong gravitational lensing in the era of Big Data**, Otranto, Italy.  
Contributed Talk: *Where are the Eddington-limited starbursts? A sub-kpc view of star formation in lensed hyper-luminous dusty star-forming galaxies*
- 06/2023 **242nd American Astronomical Society (AAS) Meeting**, Albuquerque, NM.  
Contributed Talk: *JWST/NIRCam color gradients reveal signs of inside-out quenching in the lensed dusty star-forming galaxy El Anzuelo ( $z = 2.3$ )* [ADS]
- 02/2023 **Oases in the Cosmic Desert: Understanding the Structure of the Circumgalactic Medium**, Tempe, AZ.  
Poster: *Using gravitational lensing to resolve massive rotating molecular disks around dusty starbursts at Cosmic Noon*
- 02/2023 **IAUS 377: Early Disk-Galaxy Formation From JWST to the Milky Way**, Kuala Lumpur, Malaysia.  
Poster (presented remotely): *Using Gravitational Lensing to Resolve the Rotating Molecular Disks of Dusty Starbursts at Cosmic Noon*
- 06/2022 **240th American Astronomical Society (AAS) Meeting**, Pasadena, CA.  
Dissertation Talk: *Resolving Cosmic Noon: Planck-selected extremely-luminous dusty starbursts magnified by strong gravitational lensing* [ADS]
- 09/2019 **Views on the Interstellar Medium in Galaxies in the ALMA Era**, Bologna, Italy.  
Contributed Talk: *Gas and star formation at sub-100 pc scales in lensed hyper-luminous SMGs at Cosmic Noon*

- 01/2019 **233rd American Astronomical Society (AAS) Meeting**, Seattle, WA.  
Contributed Talk: *Multi-wavelength source reconstruction of gravitationally-lensed Planck-selected sub-mm galaxies* [ADS]
- 09/2018 **The Universe as a telescope: probing the cosmos at all scales with strong lensing**, Milan, Italy.  
Contributed Talk: *Lensed Hyper-luminous SMGs Selected by Planck*
- 04/2018 **European Week of Astronomy and Space Science (EWASS)**, Liverpool, UK, Symposium: "Weak and strong-lensing techniques to unveil mysteries of the Universe".  
Contributed Talk: *Lensed Hyper-luminous SMGs Selected by Planck*
- 06/2017 **CHANG-ES Meeting 2017: The Impact of CHANG-ES**, Bochum, Germany.  
Contributed Talk: *Bayesian Methods for Measuring Faraday Rotation*
- 01/2017 **229th American Astronomical Society (AAS) Meeting**, Grapevine, TX.  
Poster: *Faraday rotation measure synthesis of UGC 10288* [ADS]
- 07/2016 **CHANG-ES Meeting 2016: Radio Halos of Galaxies**, Madison, WI.  
Contributed Talk: *Faraday Rotation Measure Synthesis of UGC 10288, NGC 4845, NGC 3044*
- 06/2016 **15th Synthesis Imaging Workshop**, Socorro, NM.  
Workshop: *JVLA/NRAO*
- 01/2015 **225th American Astronomical Society Meeting**, Seattle, WA.  
Poster: *Using JVLA Observations of SiO Masers to Probe the Extended Atmosphere of an AGB Star: W Hydrae* [ADS]

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## TEACHING & MENTORING

- 03/2023–  
02/2024 **Guest Lecturer**, Arizona State University School of Earth and Space Exploration.  
*Delivered guest lectures on the topics of Stellar Remnants and Telescopes for AST 112: Introduction to Stars, Galaxies, and Cosmology (Spring 2023 & Spring 2024 semesters; Prof. Allison Noble)*
- 09/2023–  
present **Research Advisor**, Arizona State University School of Earth and Space Exploration.  
*Primary advisor for 1 undergraduate student (Tyler Hinrichs); co-advisor for 1 graduate student (Nick Foo) and 1 undergraduate student (Sarah Saavedra)*
- 01/2019–  
11/2020 **Primary Instructor of Record**, University of Massachusetts Dept. of Astronomy.  
*Astronomy 100 and 101: Exploring the Universe Lab Section (Spring 2019, Fall 2019, Spring 2020, Fall 2020). Designed course content and prepared necessary lab materials for lab sections serving ~500 students; supervised other graduate TAs in teaching the course; migrated course content to virtual format in Spring/Fall 2020 during COVID-19 pandemic.*
- 2018–2019 **Summer Pre-college Program Course Coordinator**, University of Massachusetts Dept. of Astronomy.  
*Directed an intensive two-week pre-college program covering Modern Astronomy; supervised graduate student teachers in offering traditional lectures, hands-on lab activities, observing nights, optical data reduction and analysis with Jupyter notebooks; maintained course website for students to access material.*
- 06/2021–  
05/2022 **Undergraduate Research Advisor**, Smith College Dept. of Astronomy.  
*Co-advised undergraduate student (Lilah Mercadante '22) for honor's undergraduate thesis project alongside Prof. James Lowenthal.*
- 09/2015–  
05/2021 **Lab/Lecture Teaching Assistant**, University of Massachusetts Dept. of Astronomy.  
*Astronomy 100: Exploring the Universe, 9 semesters total.*
- 09/2015–  
05/2022 **Research Mentor**, University of Massachusetts Department of Astronomy.  
*Mentored 7 undergraduate students in research groups of Prof. Min Yun (Neil Shah '18, Silvana Delgado Andrade '19, Sam Clyne '19, Anthony Englert '21), Prof James Lowenthal (Lilah Mercadante '22), and Prof. Daniel Wang (Dylan Paré '17, Kendall Sullivan '18).*
- 2016-2021 **Summer Program Lecturer**, University of Massachusetts Dept. of Astronomy.  
*Modern Astronomy: Delivered lectures and introductory Python labs as part of a 2 to 3-week pre-college program.*
- 06/2013–  
08/2013 **Teaching Intern**, St. Paul's School Advanced Studies Program, Concord, NH.  
*Assisted Dr. Leslie Chamberlain in teaching an Introductory Astronomy summer course for high school seniors. Returned to give a guest lecture on gravitational lensing in July 2017.*
- 09/2012–  
05/2015 **Undergraduate Teaching Assistant and Study Group Tutor**, Department of Mathematics, Bowdoin College.

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## PRESS ACTIVITIES

- 10/2024 **Press Release**, [Webb Researchers Discover Lensed Supernova, Confirm Hubble Tension](#), NASA/STScI.  
ASU News: [Webb scientists confirm Hubble tension through lensed supernova discovery](#)
- 08/2024 **Blog Post - Science Communication**, Nature Behind the Paper.  
*by Patrick Kamieneski, Olivia Cooper, Daizhong Liu: [Tracing the motions of ionized and molecular gas in the gravitationally lensed, hyperluminous starburst galaxy PJ0116-24](#)*
- 07/2024 **Press Release**, [Zooming in on a surprising ring](#), ESO.  
ASU News: [Telescopes in Atacama Desert capture extreme starburst galaxy warped into fiery ring](#) (text by P. Kamieneski)
- 09/2023 **TV Interview**, [NASA telescope captures image of El Gordo galaxy cluster](#), Arizona PBS (KAET), *Arizona Horizon with Ted Simons*.
- 08/2023 **Press Release**, [Webb Spotlights Gravitational Arcs in 'El Gordo' Galaxy Cluster](#), NASA/STScI.  
ASU News: [Webb Telescope's gravitational lens reveals distant objects behind 'El Gordo' galaxy cluster](#)  
ASU News: [Einstein connects ASU professor, Holocaust survivor](#)
- 06/2023 **Press Conference**, [Illuminating Star Formation in the Warped, Dusty Galaxy "El Anzuelo" with JWST](#), AAS 242, "Discoveries in Distant Galaxies", Albuquerque, NM.

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## OUTREACH & PROFESSIONAL SERVICE

- 2024 **ALMA Ambassador**, Cycle 11.  
*Led and organized a day-long [ALMA Proposal Preparation workshop](#) (March 2024) and a two-day [ALMA Data Reduction workshop](#) (October 2024) at ASU to help support both novice and experienced users of ALMA and other NRAO facilities*
- 2024 **Chair of Local/Scientific Organizing Committee, 2024 SESE Symposium**, Arizona State University School of Earth and Space Exploration.
- 2025 **Member of Scientific Organizing Committee**, "Science with strong lensing, ALMA, and next generation radio interferometry," Charlottesville, VA, NAASC-supported workshop, anticipated in May 2025.
- 05/2024 **Data Reduction Tutorial Assistant**, 20th Synthesis Imaging Summer School.  
*Helped facilitate data reduction tutorials for the [2024 NRAO Synthesis Imaging Workshop](#) in Socorro*
- 2024–present **Journal Referee**, *The Astrophysical Journal; Astronomy & Astrophysics.*
- 2021–present **Telescope Panel Reviews**, including *Large Millimeter Telescope (2023); ALMA (Distributed Peer Review for Cycles 8, 9, 10, 11).*
- 2023–2024 **Colloquium Committee, Beus Center for Cosmic Foundations**, Arizona State University School of Earth and Space Exploration.
- 08/2023 **Local/Scientific Organizing Committee, 2023 SESE Symposium**, Arizona State University School of Earth and Space Exploration.
- 2019–2023 **Chambliss Judge**, Student Poster Competition, AAS Meetings 233, 240, & 242.
- 2018–2022 **UMass Grad Student Senator**, University of Massachusetts Amherst.  
Academic Years 2018-2019, 2019-2020, 2020-2021, 2021-2022  
*Represented the Astronomy department as a voting member in the university-wide Graduate Student Senate. Member of GSS Elections Committee, 2021.*
- 2020–2021 **Member of Diversity, Equity, and Inclusion in Admissions & Recruitment Committee**, University of Massachusetts Amherst.  
*Grad student-led committee formed to offer suggested guidelines to promote DEI in the admissions process, including the instatement of grad student-conducted interviews in 2021.*
- 03 & 12/2018 **Meet-an-Astronomer Day**, Springfield Prep Charter School, Longmeadow, MA.  
*Visited the 1st grade students at Springfield Prep and answered their questions about astronomy and the life of an astronomer.*
- 2018 **Local Organizing Committee**, University of Massachusetts Amherst.  
*Past, Current and Future Galaxy Surveys: CANDELS Meeting and TolTEC Workshop*

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## COLLABORATION & PROFESSIONAL MEMBERSHIPS

- 2022–present **Member of JWST PEARLS Collaboration**, *Prime Extragalactic Areas for Reionization and Lensing Science.*



- 2016–present **Co-Founder of PASSAGES Collaboration**, *Planck All-Sky Survey to Analyze Gravitationally-lensed Extreme Starbursts*.  
Scientific Working Group Leader: Strong Gravitational Lensing
- 2024–present **Member of International Astronomical Union.**
- 2014–present **Member of American Astronomical Society.**

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## SELECTED TECHNICAL SKILLS

- Software Experience Python, CASA, LENSTOOL, SExtractor, photutils, EAZY, BAGPIPES, Prospector, piXedfit, GALFIT, BLOBCAT, SAOImage ds9, CARTA, IRAF / PyRAF, astrodrizzle, glue-viz, L<sup>A</sup>T<sub>E</sub>X, HTML, MIRIAD, AIPS, Mathematica
- Observation / Reduction Experience **Radio/submm:** ALMA, JVLA, SMA  
**Optical/near-IR:** JWST, HST
- Languages English (native), French (professional), Norwegian Bokmål (basic)